

SUMMARIZED MINUTES

of the

SEVENTEENTH VALLEY-STATES COORDINATING-COMMITTEE CONFERENCE

Piedmont Hotel, Atlanta, Georgia

Tuesday, October 28, 1941

Table of Contents

Page

0. Personnel of the Conference	2
1. National Food Goals and the Test-Demonstration Program ..	3
Letter of Chairman Lilienthal	4
Reply of Under Secretary Appleby	6
Statement of Coordinating Committee	8
2. Report of the Agronomic Committee	9
3. Report of the Farm-Forestry Committee	10
4. Expansion of the Experimental Quick-Freezing Program ..	11
5. The AAA Provisions Regarding Phosphates, Nitrates, and Cover Crops	12
Statement of Coordinating Committee	12
6. Place and Date of Next Meeting	13
7. Executive Session on Administrative Problems	14
 <u>Appendixes</u>	
A. List of Valley-States Conferences	15
B. Report of the Agronomic Committee	16
C. Report of the Farm-Forestry Committee	23

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At the 16th conference held in Florence, Alabama, on March 4 and 5 1941, the Conference voted to hold the autumn meeting, for discussion of administrative questions, at the Piedmont Hotel, Atlanta, Georgia, on Tuesday, October 7. When the first call for this meeting was made in August, it developed that Chairman Cooper and Mr. Eisenhower, members of the Coordinating Committee, were obliged to attend another meeting on that date. By vote of a majority of the conference members, the meeting, therefore, was postponed until Tuesday, October 28.

A list showing dates and places of the sixteen previous conferences is attached as Appendix A (p.15).

The conference was called to order by Chairman Cooper at 9:15 A.M. Shortly afterwards he, Mr. McAmis, and Mr. Eisenhower, members of the Coordinating Committee, withdrew in order to consider a resolution for later presentation to the conference. At Chairman Cooper's request, Dean Schaub of North Carolina acted as Chairman.

O. PERSONNEL OF THE CONFERENCE

Because of important meetings held simultaneously in their home States, no representatives were present from Alabama, Arkansas, and Mississippi. Florida members were prevented from coming by other reasons. Director Brehm of Tennessee also could not come but was represented by Assistant Director McLeod. Directors Sanders of Louisiana and Watkins of South Carolina also were represented by others. These many absences were greatly regretted by the Conference. Dr. Hartman and Mr. Sayre, of the regional staff of the Bureau of Agricultural Economics, were present on invitation of Mr. Eisenhower.

The list of those representing the various cooperating agencies is as follows:

Alabama: None present

Arkansas: None present

Florida: None present.

Georgia: Director Walter S. Brown, Extension Service, Athens.
Director H. P. Stuckey, Experiment Station, Experiment
Mr. S. G. Chandler, Assistant District Agent, Athens.
Mr. H. C. Carruth, Extension Forester, Athens.

Kentucky: Dean Thomas P. Cooper, College of Agriculture, Lexington.

Louisiana: Mr. C. B. Roark, Asst. Farm Management Specialist, Baton Rouge.

Mississippi: None present.

No. Carolina: Dean and Extension Director I. O. Schaub, Coll. of Agric., Raleigh.
Director L. D. Baver, Experiment Station, Raleigh.

So. Carolina: Mr. H. A. Woodle, Extension Agronomist, Clemson.
Mr. W. L. Abernathy, Supervisor Test-Demonstration Farms, Clemson

Tennessee: Assistant Director J. H. McLeod, Extension Service, Knoxville.
Director C. A. Mooers, Experiment Station, Knoxville.
Dean M. Jacob, College of Agriculture, Knoxville.
Mr. H. E. Hendricks, Extension Agronomic Specialist, Knoxville.

Virginia: Director J. R. Hutcheson, Extension Service, Blacksburg.
Director A. W. Drinkard, Jr., Experiment Station, Blacksburg.

Tennessee Valley Authority, Knoxville:
Director J. C. McAmis, Department of Agricultural Relations.
Mr. Neil Bass, Chief Conservation Engineer.
Mr. L. C. Salter, Assistant Director, Dept. of Agric. Relations.

U. S. Department of Agriculture:
Mr. M. S. Eisenhower, Land-Use Coordinator.
Mr. J. L. Boatman, Chief, Div. Subject Matter, Extension Service.
Mr. R. W. Trullinger, Assistant Chief, Office Experiment Stations.
Mr. Chas. A. Sheffield, Field Coordination, Extension Service.
Dr. W. A. Hartman, Regional Representative, BAE, Atlanta.
Mr. C. R. Sayre, Farm Management Representative, BAE, Atlanta.
Dr. Carleton R. Ball, Executive Secretary, Coordinating Committee.

1. NATIONAL FOOD GOALS AND THE TEST-DEMONSTRATION PROGRAM

Discussion began on Topic 7 of the Conference program, namely:

"The desirability of reaching the national food goals in the Tennessee Valley without reducing the trend toward reduction in acreage of row crops and corresponding increase in pastures and meadows."

Chairman Cooper referred to the national goals in agricultural production, as announced by Secretary Wickard, and also to the recent letter from Chairman Lilienthal of the TVA to the Secretary of Agriculture, regarding the effect these goals might have on the agricultural program now sponsored by Valley-States agencies, and the reply received from Under Secretary Appleby. Dean Cooper then presented the statement which follows the letters.

Letter of Chairman Lilienthal

October 14, 1941

The Honorable

The Secretary of Agriculture

Washington, D. C.

My dear Mr. Wickard:

We understand that substantial increases in certain agricultural commodities, especially livestock and livestock products, are required for national defense. For some time we have recognized the need for increasing production of foods of high nutritive content. We wish to lend full support to the most effective means of obtaining this increase. However, because of the effect that any increase in row crops would have upon obtaining the maximum contribution which the Tennessee Valley can make to the national defense effort, we feel it appropriate to express our concern as to the manner in which the increased production of food is obtained. We believe there are factors in this problem which will have a peculiarly unfortunate effect in the Tennessee Valley unless they are taken into account in planning the regional and national programs.

We are informed that it is proposed to obtain the increased production of livestock and livestock products in the Tennessee Valley States largely by a substantial increase in the acreage of corn and other clean cultivated crops. While this evidently is one method of obtaining the desired increases, we believe that a far more effective method in the Tennessee Valley would be to obtain the desired increases by expanding the acreage, production, and yield of pastures and meadows.

Since 1933, the Authority has been encouraging farmers, through an educational program, to use adequate supplies of concentrated phosphatic fertilizers so that they would be able to shift land on critical slopes from row crops to pastures and meadows. This program has resulted in the establishment of a definite trend which facilitates the integrated development of the region's land and water resources. A reversal of this trend by the increase in acreage of row crops, under the particular conditions existing in this area, would, we feel, actually prevent the region from making its maximum contribution to national defense, and be unwise for other reasons.

That the necessary increases in livestock and livestock products can be obtained by intensifying the present trend toward increased acreages and yields of pastures and meadows is demonstrated by the experience of more than 25,000 test-demonstration farmers in the Tennessee Valley over a period of several years. A very large number of farms in the Valley within the past few years have made adjustments in livestock production of the scope which is now being proposed. They have done so while consistently reducing their acreage of row crops. These farms can make still larger increases without reverting to cropping practices that in this area have been destructive.

It is apparent that increased agricultural production in the Tennessee Valley should be achieved in such a way that there will be no conflict with the realization of the maximum contribution of the Tennessee Valley region to the national defense. The maximum contribution of the Valley can be assured only by recognition of its integrated program for development of both land and water resources. You are, of course, aware that the Tennessee Valley is an area of high altitudes, high rainfall, and open winters. Its rural population pressure is high, and agricultural production per capita is low. Consequently, the Valley's problems of land-use are critical. At the same time the Valley is an area of strategic military importance. In it are located some of the most important defense industries, such as the aluminum industries which use large quantities of electric power. It has developed into an important center for the manufacture of munitions. Accordingly, the area's need for wisely utilizing its water resources, particularly its power by-product, is of major national importance.

It is recognized, I am sure, that the land resources and the water resources of the Tennessee Valley should be developed jointly if both are to make their maximum contribution to the immediate defense needs of the nation and to the permanent stability and security of the region. Full and effective development of the Valley's land resources can be achieved only if an adequate supply of phosphate and other minerals is made available to fortify the soil for agricultural production. The Government's plant at Muscle Shoals for concentrated phosphates, which has been supplying thousands of tons of this material to the land of the Valley, is dependent upon electric power derived from the Tennessee River and its tributaries. At the same time, efficient use of the Valley water resources for development of power depends upon a uniform and controlled stream flow in the river. Such regulated stream flow can be obtained in maximum degree only if the lands in the watershed are protected.

In order for the farmers in the Tennessee Valley to intensify their development of a grass-livestock agriculture, it is necessary that they be assured of an adequate and economical supply of phosphates. As you know, at the recent conference in Washington regarding the relationship of phosphate to national defense, the staffs of the Department of Agriculture and of the Authority agreed that phosphate should be designated as a critical defense material and that steps should be taken immediately to guarantee the necessary supply of this important product. As a result the Department and the Authority are in a position to make a joint contribution which would not only be helpful in achieving the goals of the national program for producing adequate quantities of nutritive foods derived from phosphate-rich

soils, but also to assure the Valley region that it can continue to make its proportionate contribution to the national defense effort.

We feel that this matter is of such vital importance to the national welfare that we are bringing it to your special attention. At the same time, we are bringing it to the attention of the Correlating Committee representing the Department of Agriculture, the land-grant colleges in the Valley States, and the Tennessee Valley Authority. To that end we are sending a copy of this letter to Dean Thomas P. Cooper, Chairman of the Correlating Committee. We feel confident that in this way it will be possible for all agencies who are responsible for programs of national, state, and regional importance to resolve any apparent conflict in the interests of national welfare.

Very truly yours,

(Signed) David E. Lilienthal
Chairman of the Board.

Reply of Under Secretary Appleby

October 23, 1941

Mr. David E. Lilienthal

Chairman of the Board

Tennessee Valley Authority

Knoxville, Tennessee

Dear Mr. Lilienthal:

Your letter of October 14 on the importance of agricultural conservation and watershed protection, including protection of strategic defense plants in the Tennessee Valley, defines in regional terms a policy which the Department of Agriculture considers fundamental to national welfare during peacetime and defense emergency alike. To that end the Department prepared production goals for 1942 which can be achieved, I believe, without disrupting present methods of conservation farming.

The goals suggested at the Memphis meeting on September 29 and 30 showed the proportionate share each of the Tennessee Valley States was expected to contribute to the total national production required to meet needs at home and abroad in 1942. How each State will go about meeting these goals is a question to be determined largely by each State itself; indeed, State-USDA Defense Boards and State Land-Use Planning Committees are now working on this phase of the problem and in this, as you know, the State Extension Services and the Land-Grant Colleges have a significant responsibility. Type-of-farming areas, location of level and protected fields not susceptible to erosion, and alternative methods of feeding are some of the factors which will be taken into account by State agricultural leaders in determining the counties and even the individual farms where increased production is feasible.

The estimates for the State of Tennessee provide an example of how expanded production may be achieved in the Valley States without endangering the conservation program. Tennessee goals suggest a considerable expansion of erosion resistant crops and while there may be an increase in acreage for some clean-tilled crops this increase will be offset in part at least by a reduction in the acreage of other clean-tilled crops. The suggested increase in corn acreage has been estimated at 88,000 acres or about 3.2 percent of the estimated 1941 acreage of 2,712,000 acres. The suggested acreage for cotton in 1942 is less than the estimated 1941 acreage by 45,000 acres. Suggested reductions in tobacco acreage would amount to about 4,000 acres. The net increase in clean-tilled acreage due to expanded corn acreage, when offset by these reductions, is only about 39,000 acres or 1.4 percent more than total corn acreage in 1941. At the same time the suggested acreages of soil-building crops reflect an increase of 88,000 acres for oats or 86 percent; 60,000 acres for hay (harvested) or 3.6 percent; and 25,000 acres for barley or 36 percent. The goals for Tennessee also suggest that winter cover crops should be expanded this year from the 871,000 acres planted in 1940 to 1,074,000 acres. This represents an increase of 12 percent in winter legumes and 28 percent in winter non-legumes. Next year further increases would bring about expansions of 24 percent and 56 percent above corresponding acreages in 1940. Unavailability of seed is the limiting factor on higher goals for winter legumes.

The relatively small increase in corn acreage and other clean-tilled crops will probably take place in bottom lands and other level areas. If this expansion is accompanied by winter cover cropping and other conservation practices such as crop rotation, contouring, and terracing where needed, there is little possibility of endangering the State's ability to make its maximum contribution to the defense program.

What is true of Tennessee is also true of the areas in the other Valley States which lie within the Tennessee watershed. In each State responsibility for increasing production to meet national goals will be distributed among the counties according to type-of-farming areas and the adaptability of farm land to increase acreage of selected crops.

Your suggestion that necessary increases in livestock and livestock products can be obtained by intensifying the present trend toward increased acreages and yields of pasture and meadows presupposes, of course, continued availability of concentrated phosphatic fertilizer in 1942. It is unnecessary for me to point out that a serious fertilizer shortage, due to the higher priorities assigned defense use of chemicals ordinarily going into fertilizer mixtures, already threatens our supplies in 1942. I do not see how for immediate purposes we could place even greater dependence upon fertilizer application to pastures as a method of increasing the productivity of livestock enterprises in the Tennessee Valley.

All of us recognize, I believe, that every factor of production which can contribute to national defense must be fully utilized if the national effort is to be successful. The danger from abroad now confronting our country overshadows all other problems not directly related to the task of

defeating the enemies of democracy. The agriculture of this country has before it a well-defined objective. The State agricultural institutions have pledged themselves to that objective, and I am confident that the Land Grant College Presidents, the Directors of Extension, and the Directors of the Experiment Stations of the Valley States, like those of other regions, recognize that we are today engaged in a national effort more challenging than any we have shared before. They understand, I am sure, how the farmers of their States can win out in this undertaking without jeopardizing the conservation program.

I am glad you sent me your frank opinions as you did and in view of the possibility that this matter will be discussed at the Valley States Conference in Atlanta on October 28 I am sending a copy of this reply to the appropriate Land Grant Colleges.

Sincerely yours,

(Signed) Paul H. Appleby
Under Secretary

Statement of Committee

"The Correlating Committee has given consideration to the communication of Chairman Lilienthal to Secretary Wickard with reference to the effect of State and county goals for row crops on the long-time program of agriculture in this region.

"It is believed, as recognized by the correspondence, to be desirable if not essential that the gains which have been made in this Valley program, -- specifically, the production of grass and forage crops, -- should be maintained, the use of phosphates continued, and the agricultural plant so operated that loss shall not occur.

"Fundamental to this, is the need that agriculture meet the responsibility for agricultural production, the support of the national program, and the protection of basic resources, in such a way as to contribute to the optimum use of the waters of the Tennessee River.

"It is deemed essential that the agricultural leadership of the Valley States shall carefully consider the breakdown of 1942 goals by counties and that allotments be suggested without jeopardizing the program that has been under way during the past eight years."

Most of the State representatives agreed that the production goals for 1942 in the Valley States could be reached without jeopardizing the progress so far made in conservation farming. In the discussion it was pointed out that the test-demonstration and other action programs already had reduced corn acreage while increasing the production of animals and of animal products and that the new goal of 80,000 more acres of corn in the Valley might put corn back on steeper eroding lands. It was noted that the

new goals had been set by local planning committees after careful study and were designed to preserve the present program. To this it was replied that the 80,000-acre increase would mean little to a corn-growing State but might cause real injury in a hilly or mountain State. It was suggested: (a) that progress already made be maintained through education; (b) that the present program will meet livestock goals; (c) that the only objections were coming from milksheds; (d) that proposed soybean acreage was being met in Ohio-Valley counties; and (e) that the mistakes of 1917 not be repeated.

MOVED by Dean Jacob, and seconded, that the statement of the Coordinating Committee be adopted by the Valley-States Conference. CARRIED.

2. REPORT OF THE AGRONOMIC COMMITTEE

Copies of the mimeographed report were distributed by Dr. L. D. Baver, who was asked by the Coordinating Committee to take the chairmanship after the death of Chairman Tidmore in July. Dr. Baver then reviewed briefly the meeting of the Agronomic Committee in Florence, Alabama, in March and the Conference of Agronomists in Knoxville, Tennessee, in early May, paying tribute to the work of the late Dr. Tidmore and requesting that the Conference members stand for a minute of silent tribute to him, which was done.

Dr. Baver then reviewed the principles which had governed the preparation of the program of the Agronomist's Conference, stated that Dr. Tidmore had assembled the author's summaries of the papers presented, and that the present Committee report was based on those summaries and the personal notes and recollections of the present chairman and had been prepared by him therefrom, with some assistance from the Executive Secretary.

He then presented and discussed the report, section by section, including the final recommendations for State meetings including wide representation of subject-matter groups concerned with the Valley-States agricultural program and a later Valley-States conference of specialists to consider, on a 7-State basis, the problems reviewed and recommendations made by the State groups.

MOVED by Director Stuckey, and seconded, that the report and its recommendations be adopted. CARRIED. The report is attached as Appendix B (p. 16).

MOVED by Director Hutcheson that specialists in agronomy, animal husbandry, and dairying meet with the next Valley-States Conference in a 2-day meeting. Seconded and CARRIED. (See amendment under discussion of Report of the Committee on Farm Forestry).

3. REPORT OF THE FARM-FORESTRY COMMITTEE

Chairman Drinkard distributed mimeographed copies of the Committee report and then presented and discussed its contents. He pointed out that, in Virginia, at least, Station research on the problems of farm forestry was not in proportion to the importance of farm woodlots and forest lands, either from the standpoint of their acreage in total land acreage or the proportion of wages and wage earners in forest industries as compared with total wages and wage earners. During presentation, a slight change in the language of paragraph (e) on page 4 was agreed upon.

MOVED by Director Huteson that the report, as changed, be adopted. Seconded, and CARRIED. The report is attached as Appendix C (p. 23).

Chairman Drinkard referred to the report of a previous committee, of which Director Brehm was Chairman. This report appears as Appendix B to the Minutes of the Tenth Conference in 1938 and was discussed on pages 4-5 of the minutes. It was discussed again in 1941, on pages 19-20a of the minutes of the Sixteenth Conference.

Mr. Salter indicated that the Authority regards forestry on farms as an integral part of the total farm unit and therefore should be taken into consideration along with other major aspects of the farm unit, particularly on those farms participating in the test-demonstration program. Mr. Salter stated that he thought it was proper that the group take recognition of the land-grant institutions' position with respect to forestry as indicated by the report, and suggested that the role of the Authority might be considered that of strengthening the institutions in regard to this position. In the discussion it was brought out that the Authority would be cooperating with the University of Tennessee in the conduct of a major research project that the Tennessee Experiment Station is carrying on with a \$30,000 fund just recently obtained. In response to questions it was further brought out that TVA foresters are engaged chiefly in research, seedling production, and CCC-camp erosion-control activities.

Director Brown reported that the Assistant County Agent in one Valley County is a trained forester and works both with test demonstrators and other farmers. As a result, these farmers are beginning to consider their woodlots as part of the farm and a source of income. He referred to the recently-issued Occasional Paper No. 100, of the Southern Forest Experiment Station, New Orleans, which contains data on revenues from farm woodlots in Washington Parish, Louisiana.

Mr. Trullinger and Dr. Baver, in further discussion, suggested that the limited funds available might well be applied to problems of immediate and practical farm forestry rather than to expensive run-off studies, etc.

It was MOVED, and seconded, that the above recommendation be adopted. CARRIED.

Dean Schaub discussed technical studies made by the Appalachian Forest Experiment Station on forest water problems and the cooperation of the North Carolina Experiment Station in seeding lespedeza on a portion of their experimental area in order to determine effects on infiltration. He referred further to a new Station area, now wholly in forest, on the North Carolina-Georgia line.

Director Drinkard told of the Virginia experiments on small watersheds, which now have resulted in studies on a 10,000-acre tract with varying cover on different farms and fields and requiring the cooperation of foresters, engineers, weathermen, hydrologists, etc.

Director Hutcheson suggested that such areas be used as large-scale demonstrations and that assistant county agents might be taken to visit them and the Forest Experiment Station areas. In response to questions, Mr. Salter stated that TVA would look with favor on tours by assistant agents, within proper limits.

MOVED by Director Baver that the spring meeting contain a technical program on farm forestry. Seconded and CARRIED. (See previous motion on page 9).

MOVED by Director Stuckey that a committee of three (one agronomist, one in animal husbandry and dairying, and one forester) be appointed by the Chairman to arrange a technical program on these subjects for the two-day meeting. Seconded and CARRIED.

Without formal motion, the Conference recessed at 12 M. for lunch, under agreement to reconvene at 1:15 P.M.

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4. EXPANSION OF THE EXPERIMENTAL QUICK-FREEZING PROGRAM

Mr. Salter reported on the activities of the Authority in cooperation with the University of Tennessee and the University of Georgia which have resulted in the development of a process and two types of machines for the effective quick-freezing of fruits and vegetables. The Authority has developed a small-type and a large-type machine. One of the large machines, of 1,000 pounds per hour capacity, is now being utilized by Chickamauga Producers, Incorporated, a farmers' cooperative association in Cleveland, Tennessee, under purchase contract arrangement with the Authority. Another large-type machine of a ton an hour capacity has been acquired under contract with the Birmingham Ice and Cold Storage Company, Birmingham, Alabama. The TVA Board of Directors recently favored the entering into of negotiations for a contract to provide for the commercial manufacture of quick-freezing machines with capacities of as low as 200 pounds per hour. These machines would be commercially available outside as well as within the Valley area to anyone desiring to purchase them. They would be particularly suitable for food-processing plants, including freezer-lockers and cold storage. They would also be suitable for farmers' cooperatives, particularly small or new associations just beginning the food-freezing business.

Director Stuckey reported the demonstrational use of one of these small machines mounted on a truck and taken from field to field to freeze the products, which were then taken by truck to cold storage.

Assistant Director McLeod noted that, in the first year's operation of the Chickamauga Association, injury had occurred to some products which adversely affected their saleability. He wondered what steps were being taken to avoid similar experience. In responding, Mr. Salter stated that the difficulties referred to were partly attributable to the use of a large-scale machine in an area where the farmers were unaccustomed to growing vegetables on a large scale and coordinating farm production with plant production, and also where the use of harvesting machinery such as viners was not adjusted in keeping with the use of immersion frozen methods and the freezing solution utilized. He indicated that TVA had, with the assistance of the Georgia Agricultural Experiment Station, been working on this problem, and that in the use of the small machine referred to by Dr. Stuckey he felt that findings had been made that are expected to enable users of the machine to avoid the major difficulties which were experienced by Chickamauga. He pointed out, however, that for the economical advancement of the quick-freezing program in the Valley area, considerably more work was needed to determine the adaptability of products suitable for quick-freezing to localities in which quick-freezing operations may be undertaken, and that in both research and educational activities with farmers there were only a few sections in the Valley area that might successfully utilize quick-freezing process without considerable work of this nature.

5. THE AAA PROVISIONS REGARDING PHOSPHATE, NITRATES AND COVER CROPS

Chairman Cooper read the following statement and recommendations prepared by the Coordinating Committee.

Statement from Coordinating Committee

"It is increasingly evident that the supply of phosphatic fertilizer is greatly insufficient to meet agricultural needs in this region. Several factors have contributed to what now amounts to an acute situation with respect to the supply of this essential material:

"(1) The accumulated deficiency over a period of years in the application of this mineral in relation to its withdrawal from the soil in crop and animal production;

"(2) The high requirements of the soils of the South for phosphorus;

"(3) The increased demands for more and higher-quality feeds for livestock and human consumption;

"(4) The intensified program of agricultural readjustment in the interest of soil and water conservation on which the farmers of this region, under the guidance of their agricultural institutions and agencies, have been engaged during the past seven years, and which is dependent on the continued use of phosphate material to support legume and pasture production;

"(5) The withdrawal, from an already inadequate production-capacity for concentrated phosphate fertilizer, of a large tonnage of this material to be shipped to Great Britain in order to fortify and support the soils of that country for feed and food production;

"(6) The withdrawal, from this same inadequate production-capacity, of phosphorus in its elemental form for making munitions required by our armed forces and for nations procuring these materials under the Lend-Lease Act.

"The TVA fertilizer plant at Muscle Shoals, with a capacity of approximately 100,000 tons of concentrated phosphatic fertilizer annually, has been shut down to one-fourth its capacity since May, 1941, because of the unavailability of power on the TVA system with which to supply the additional National-Defense industrial requirements and its normal commitments to cities, rural cooperatives, and non-defense industries, the latter full use of which may not be so essential to our nation as is the phosphate fertilizer which would result from the full operation of the Authority's plant.

"This conference therefore desires to go on record to the effect that phosphatic fertilizers are urgently needed for the agricultural program in this region, and in the nation, especially during its National-Defense effort, and to urge that, at the earliest possible moment consistent with its obligation to other National Defense objectives, the Authority resume and continue full operation of its facilities for the production of concentrated phosphatic-fertilizer materials."

MOVED by Dean Cooper, and seconded, that the statement be adopted by the Conference. CARRIED.

6. PLACE AND DATE OF NEXT MEETING

MOVED by Director Hutcheson that the next meeting be held at Abingdon, Virginia, on Tuesday, March 3. Seconded and CARRIED. (See below)

This motion and its approval overlooked the fact that the Conference already had voted to hold a 2-day spring meeting (See page 9).

(After the Conference had adjourned, Director Hutcheson expressed his desire to change the place of meeting from Abingdon to Roanoke, on account of spring weather and hotel accommodations in the mountain counties. He also desired to change the date to provide for a 2-day meeting on Tuesday and Wednesday, March 3 and 4. This matter will be referred to the Coordinating Committee and to the Conference for decision. Executive Secretary)

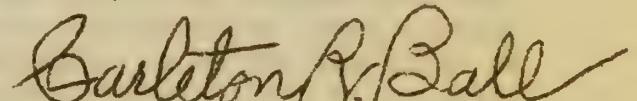
(Later. The members of the Coordinating Committee have approved the change of location from Abingdon to Roanoke, Va. It now will be referred to the Conference members for approval. Executive Secretary)

7. EXECUTIVE SESSION

Chairman Cooper suggested that the Conference go into executive session to discuss important administrative problems, which was done at 2:15 P.M. without formal vote.

At the close, it was MOVED by Director Huteson that the Conference adjourn. Seconded and CARRIED.

Respectfully submitted,



Carleton R. Ball,
Executive Secretary

VALLEY STATES CONFERENCES

of

LAND-GRANT COLLEGE DEANS AND DIRECTORS,
TENNESSEE VALLEY AUTHORITY OFFICIALS, and
U. S. DEPARTMENT OF AGRICULTURE REPRESENTATIVES

<u>No.</u>	<u>Date</u>	<u>Place</u>	<u>Minutes</u>
1.	1933		
2.	1933, October 7	Knoxville, Tennessee.	Typed, 1 p. Funchess letter, 1 p.
3.	1934, July 6-7	Chattanooga, Tennessee.	Typed, 5 pp.
4.	1934, October 27	Muscle Shoals, Alabama.	Mimeographed, 13 pp.
5.	1935, December 12	Chattanooga, Tennessee.	Typed, 15 pp.
6.	1936, June 26-27	Chattanooga, Tennessee.	Mimeographed, 20 pp.
7.	1937, February 6	Knoxville, Tennessee.	Typed, 5 pp.
8.	1937, July 10	Knoxville, Tennessee.	Typed, 10 pp.
9.	1937, November 3	Knoxville, Tennessee.	Typed, 5 pp.
10.	1938, April 25	Knoxville, Tennessee.	Typed, 12 pp.
11.	1938, October 4	Atlanta, Georgia.	Typed, 10 pp.
12.	1939, April 4	Birmingham, Alabama.	Typed, 9 pp.
13.	1939, October 2	Chattanooga, Tennessee.	Typed, 9 pp.
14.	1940, April 2	Knoxville, Tennessee.	Mimeographed, 18 pp.
15.	1940, October 1	Asheville, North Carolina.	Typed, 9 pp.
16.	1941, March 4-5	Florence, Alabama.	Mimeographed, 32 pp.
17.	1941, October 28	Atlanta, Georgia.	Mimeographed, 29 pp.

REPORT AND RECOMMENDATIONS OF THE AGRONOMIC COMMITTEE

1. HISTORICAL BACKGROUND FOR COMMITTEE REPORT AND RECOMMENDATIONS

When the program for the semi-annual Valley-States Conference of October, 1940, was being prepared, it was suggested that a meeting of Valley-States agronomists be held in connection therewith. Because of the short time remaining before the Conference, the Coordinating Committee appointed a Committee of Agronomists to meet at Florence, Alabama, on March 3 and 4, just before the Conference meeting. The committee consisted of Dr. J. W. Tidmore of Alabama (Chairman), Dr. L. D. Baver of North Carolina, Professor George Roberts of Kentucky, and Dr. W. H. MacIntire of Tennessee. This committee was directed to consider agronomic problems in connection with the cooperative research and test-demonstration programs with TVA phosphates and other plant-food materials and to recommend to the Conference a program for a later meeting of Valley-States agronomists together with suggestions for additional research needed.

The committee met as scheduled and prepared and submitted to the Conference a proposed program for a meeting of agronomists, together with suggestions for improving the experimental work. The program and suggestions were approved, together with the committee's recommendation that the meeting of agronomists be held in Knoxville, Tennessee, on May 1 and 2. The report and recommendations of the committee will be found on pages 12 to 15 of the minutes of the 16th Valley-States Conference.

The meeting at Knoxville was held as scheduled and the report which follows is a synopsis of their conclusions and recommendations.

2. THE PRESENT STATUS OF RESEARCH AND EXTENSION ASPECTS OF THE PROGRAM

The discussions of May 1 and 2 at Knoxville brought out the following information concerning the use of phosphatic fertilizers:

A. Liming Practices. The efficiency of various phosphatic fertilizers is related to liming practices.

1. In mixtures of superphosphates and liming materials, the transition of water-soluble phosphates to dicalcium and dimagnesium phosphates is very rapid, whereas the succeeding change to tricalcium phosphate is slow. Tricalcium phosphate will react somewhat rapidly and completely in the presence of calcium and fluorine to form an insoluble phosphate similar to raw rock phosphate.
2. The rate of liming depends upon the soil type and the kind of legume that is being grown.

B. Soil Differences. The relative efficiency of phosphates varies from soil to soil.

1. Further research is necessary to evaluate soil differences in terms of more efficient phosphate utilization.

C. Type of Farming. The efficiency of various forms of phosphate must be considered from the type of farming practice used.

1. In a rotation system of farming, the major benefits of phosphatic fertilizers are obtained when the fertilizer is applied to the winter grain on which the grasses and legumes are sown. Small grains are more responsive than corn to phosphatic fertilization. Fused rock phosphate has shown a slight superiority over the other forms of phosphatic materials on hay and forage crops in several of the experimental set-ups.

2. Experiments with various phosphatic materials in complete fertilizers on cotton have shown only small differences between the various forms. Sulfur-free fertilizers on many coastal plain soils were not as good as those containing sulfur. In several instances, ordinary superphosphate excelled triple superphosphate, for this reason.
3. In pasture production, there was little difference between the various forms of phosphates, although fused rock phosphate showed significantly better results than triple superphosphate and calcium metaphosphate in the North Carolina experiments. Phosphatic applications without limestone were not as efficient as those in the presence of lime.

D. Chemical Composition of Plants. Phosphate and lime applications affect the composition of pasture plants.

1. Application of "available" phosphates to pastures almost always produced increases in the nitrogen and phosphorus contents of the pasture herbage. Frequently, the calcium content also was increased. Unavailable phosphates had variable effects on the composition of the herbage.
2. Limestone increased the calcium content of the herbage. Its effect on the nitrogen and phosphorus contents usually was small and variable. When used with phosphates, there was little effect on the nitrogen and phosphorus contents of the herbage above phosphate alone.
3. Pasture species varied in their uptake of calcium and phosphorus. Consequently, variations in herbage composition arise from change in the proportion of different species induced by liming and phosphating.

E. Animal Nutrition. The nutrition of animals is related to the phosphate content of the crop.

1. The phosphorus of a hay of markedly low phosphorus content is not as available to the animal as the phosphorus of a high-phosphorus hay of the same variety. This is true even if the quantities consumed are such as give the same total quantities of phosphorus.
2. The difference in the growth and phosphorus retention by animals (rats) is associated with the mineral fraction of the hays. Slight differences in total phosphorus content might mean the difference between a deficiency and a sufficiency of phosphorus left in an assimilable form to meet the demands for growth and bone development in rapidly-growing animals.

F. Soil Survey. The use of the soil survey information in the experimental and demonstrational programs.

1. Soil survey information is being used to a varying extent throughout the seven States as a basis for:
 - a) Locating field experiments and test-demonstration areas and farms.
 - b) Extending and applying the results of research and of test-demonstration practices to other farms and areas.
 - c) Recommendations on the use of lime, fertilizer, and types of rotations and other soil management practices.
 - d) Familiarizing county agents, other agricultural workers, and farmers with different soils.

G. Influence of Test-Demonstrations. Test-demonstration farms have had a pronounced effect on soil improvement and conservation practices in their communities.

1. Effects on farmers themselves: Group cooperation, meetings, and demonstrations have created a desire for soil improvement and conservation practices. Adjustments in land use and live-stock production have been made; increased acreages of hay and pasture crops have resulted; increased yields of nearly all crops have been obtained; increased vigor of livestock through better animals, feed, and management has taken place; increased food production for the farm family has occurred.
2. Effects on methods of soil improvement: Recommendations of the Experiment Station are being tried on many farms under varying conditions and observed by station workers, extension workers and farmers. Practices are being changed to meet needs of different farms.
3. Effect on spread of improved practices:
 - a) Although it is difficult to separate the influences of various action programs, the test-demonstration farmers have been leaders in the:
 - 1) Increased use of lime and phosphate.
 - 2) Seeding of legumes, both summer and winter.
 - 3) Establishment and maintenance of permanent pastures.
 - 4) Tree planting and woodlot management.
 - b) These effects on the community have come about by:
 - 1) Farmer to farmer chats.
 - 2) Organized tours to demonstration farms.
 - 3) Individual observation.

3. RECOMMENDATIONS OF THE AGRONOMIC COMMITTEE, BASED UPON
DISCUSSIONS AT THE KNOXVILLE MEETING

The following recommendations are made as representing the consensus of opinion of the agronomists taking part:

A. Improvement of the Experimental Work:

1. More research on different soil types relative to characteristics that serve as a basis for:
 - a) Rates and methods of phosphate and lime applications.
 - b) Need of supplements, such as sulfur, calcium, and minor elements, to high-analysis phosphates.
 - c) Determining the residual effects of the various phosphates.
 - d) Determining the need of potash applications.
2. More information on pasture-seeding practices in relation to the phosphate and liming programs.
3. More work on rotations throughout most of the area, particularly with reference to the efficiency of phosphates.
4. Increased work on the effect of phosphorus on plants and of phosphated plants on animal nutrition, -- especially in the attempt to find out if lime and phosphate are having any effect upon the health of the community in which they are being used.
5. More information from farms adjacent to the test-demonstration units, in order to determine more accurately the local influence of the program. This would permit comparing farms not under test with those upon which complete demonstrations have been conducted.
6. Need for evaluating soil-productivity effects of the phosphate program in terms of indexes that can be used to supplement the present methods of interpreting farm-income and inventory changes.

B. Improvement of the Test-Demonstration Program.

1. The necessity of choosing sufficient and completely comparable untreated areas for checks.
2. Any possible potash deficiencies should be avoided by applications of potassium. This is especially true on legume crops.

C. Safeguarding the Southern Agricultural Program in General:

1. The phosphates in this region should be preserved for agricultural purposes within the region, especially in light of:
 - a) the increased demands for more and higher quality foods for livestock and human consumption.
 - b) the high requirements of the soils of the south for phosphorus.
 - c) the expense involved in having to bring distant phosphates into the region.

D. Recommendations Regarding Further Conferences. In order that this committee report shall have the fullest possible consideration and usefulness, the Committee recommends that each of the seven Valley States hold a conference to discuss it. It is felt that such a conference should include all types of specialists concerned with the conduct or interpretation of the research and test-demonstration programs with TVA phosphates and other plant-food materials. Such a group might include representatives of crops and soils, animal husbandry, and dairying, agricultural chemistry, home economics, agricultural economics and agricultural engineering, from both research and extension viewpoints. Following such State conferences, it is recommended that a similar Valley-States Conference consider the problems and recommendations on a 7-State basis.

Respectfully submitted,

L. D. Baver, Chairman
W. H. MacIntire
George Roberts

REPORT OF THE COMMITTEE ON FARM FORESTRY
IN THE TENNESSEE VALLEY
(October 28, 1941)

The committee held a meeting at Knoxville on May 1 and 2, 1941 and there had opportunity to obtain counsel and suggestions from Mr. J. C. McAmis of the Agricultural Division and Mr. Richard Kilbourne of the Forestry Department of the TVA, and from Dr. R. E. McArdle and Mr. R. M. Nelson of the Appalachian Forest Experiment Station.

^{seven}
The ~~eight~~ states which lie partially in the basin of the Tennessee River have a deep interest in conserving water and soil in this region for the production of useful plants and animals on the 18 million acres of farm land in this Valley (of which about one-third is being used for farm crops, one-third for pasture, and one-third for farm woodlots); as well as an interest in the 8 million acres of non-farm land in this Valley. It falls within the scope of authorization of the land-grant institutions of this area to render educational service and research on this subject, and therefore these institutions can cooperate among themselves and with the United States Department of Agriculture, the Tennessee Valley Authority, and other agencies in connection with the several phases of land use in relation to soil and water conservation. We invite the TVA to suggest ways and means by which the land-grant institutions may make this cooperation more effective.

^{seven}
Let it be stated in the outset that these ~~eight~~ states have a serious responsibility for education, research, and extension teaching with reference to farm forestry. Few people will contend that these ~~eight~~ states have fulfilled their whole duty in the past in connection with farm forestry. In fact the Forest Service of the United States Department of Agriculture has taken the lead and rendered much valuable service to this region as well as to the nation as a whole. At the present time the Tennessee Valley Authority has a forestry organization of

- 2 -

130 people of whom 60 are technical foresters; whereas the ~~eight~~^{seven} states have only 36 persons employed in teaching, research, and extension, and ~~only~~^{the} seven ~~of the~~ states have separate state forestry departments.

(1) The Relation of Land Cover to Soil and Water Conservation.-- The forest is the most effective land cover for preventing erosion, delaying run-off, and preventing the silting of reservoirs; and much of the hill land in the Tennessee Basin should be kept in permanent forests under scientific management. Grassland is the next best cover for land to conserve soil and water; and the pastures in the Valley should be constantly maintained by proper fertilization, reseeding bare spots to suitable species, and proper regulation of grazing to avoid damage to the sod. In the Valley the landowners must use part of the land to produce food and feed. Some crops, such as corn, cotton, and tobacco, because of the customary system of cultivation, encourage run-off and erosion to a greater extent than barley, wheat, and crops grown in good rotations. It is a question of judgement or compromise in the use of the land that will afford the landowner a living under existing conditions. The landowner often bases his decision on the immediate advantages of a particular course of action rather than on the long-time advantages of an alternative course of action.

2. Should further Research be Undertaken?-- Numerous investigations have been made in the United States in the past 30 years on questions related to vegetation and watershed treatments as they influence run-off, silting, and stream flow as is shown by the bibliography hereto appended. Numerous investigations are now under way which have a direct bearing on the problems of soil and water conservation in the Tennessee Basin. Effective procedures in wise use of the land in this area are complicated by numerous small holdings of land, too much population pressure on the land, and too little money in the hands of the landowners.

The Appalachian Forest Experiment Station at Asheville, N. C., handles the forest research of the Forest Service of the United States Department of Agriculture in a territory which includes West Virginia, Virginia, North Carolina, South Carolina, eastern Kentucky and Tennessee, and northern Georgia. Dr. McArdle and Mr. Nelson explained to the committee the nature of the research now in progress at that station. Experiments and research are in progress on an area of about 5000 acres involving some 40 small watersheds. Studies are being made on an inventory of forest resources, forest management, cut-over forests, improvement of young stands in the mountain regions, seed production, tree planting: forest, water, and soil relations; solving the flood problem through land management, the forest fire problem, fire weather service, diseases of trees, insect pests; the influence of bare, cultivated, and burned-over areas on run-off and erosion; the different ways of the disappearance of water, down-stream benefits of proper land use, protecting fish in the streams, etc. Much valuable information will come out of the research at that station as time goes on. That station doubtless needs more financial support, but its work does not need to be duplicated.

Stations and forestry departments in most of the ~~eight~~^{seven} states in the Tennessee Basin are conducting investigations on limited phases of farm forestry and rendering educational and administrative service in this field. Research should be continued and increased in volume and scope as regards specific problems on different soil types, geological formations, degree of erosion, and slopes to establish facts and principles on the following points:

- (a) Quantitative data on the effects of present good farm practices on erosion control or soil movement.
- (b) Quantitative data on the effects of fire control on soil erosion and growth of timber. The cost of fire control is a small sum per acre. How much is fire prevention worth to the landowner?

(f) Quantitative data on economic returns from the farm to the land owner.

- 4 -

- (c) Quantitative data on effects of fertilizers on grass, and species of plants as cover for particular soil types. What are the kinds of land cover that yield the greatest economic returns to the landowner?
- (d) Quantitative data on the annual growth of forest trees of different species in relation to soil types and moisture.
- (e) More exact and discriminating use of land so that areas which can not be maintained in permanent pasture be returned to timber uses before they have been too seriously depleted.

The stations are now doing research on some of these topics in cooperation with the TVA, and doubtless they are ready and willing to cooperate with other agencies along these lines to the extent of their available resources. It may be desirable for specialists in the several states to confer in view of planning cooperative research on these topics in the same manner that was followed by the agronomists.

(3) Action Programs and Procedures.-- There is available already much exact information on this whole question. Experience and observation in this country and in other parts of the world show the results that may be expected when the forests on hill land are destroyed and when hill land is cultivated without due regard to conserving the water and soil. Without waiting for the results of further research, we should now intensify our educational and action programs in a uniform manner in this region to the extent of achieving in the near future the following objectives:

- (a) The control of forest fires.
- (b) The improvement of forest management practices.
- (c) The planting of trees or the making of permanent pastures on land not suitable for cultivation.
- (d) The education of landowners as to the economic and social benefits of good forest management from the standpoint of the individual and community.
- (e) Recognition of the ~~impossibility of~~ ^{Problems involved in} using land for the growing of timber and for grazing at one and the same time.

There are difficulties to be overcome in achieving these objectives. The land-

owner faces the practical condition of making a living for his family, and in many instances he feels that he cannot follow the procedures that he knows are desirable in a particular case; he simply does not have the money to do what should be done. There are cases where public ownership of the land for national forests or parks or for state forests or parks or for safeguarding city water supplies is the most practicable way to proceed. For the sake of the land and the people on the land, and for the sake of the people and the engineering structures and industrial enterprises farther down stream, it is necessary to find ways and means of achieving these objectives.

(4) Methods for Intensifying Action Programs and Procedures through Educational Efforts.-- The committee feels that much can be accomplished by prompt and aggressive action in the eight states along the following lines:

- (a) By encouraging counties and states to support fire control more adequately, and by discouraging the practice of landowners of burning brush, grass, and crop residues.
- (b) By arranging for specialists and county agents to have sufficient time to serve farm forestry in proportion to its economic importance.
- (c) By providing intensive training for county agents in this region on farm forestry procedures.
- (d) By making suitable provision for more forestry specialists, and more assistant county agents in this region as suggested by a special committee, of which Director C. E. Brehm was chairman, on April 25, 1938.
- (e) By stirring up the interest of landowners in planting trees on land not suitable for cultivation of permanent pastures, and finding means of aiding those who are financially unable to do the work that will be beneficial to themselves and the community.
- (f) By working in season and out of season at the job of controlling the actions of human beings in desirable ways (the hardest problem of all).

(5) The Eight States in the Valley Must Support Research in Farm Forestry

More Adequately.-- Generally speaking the states in the Tennessee Basin have not

supported research in farm forestry in proportion to its economic importance. People in general and the appropriating authorities in particular are too often unaware of the tremendous importance of farm forestry in our agricultural economy; therefore farm forestry is often seriously neglected. For example, in Virginia forest land and farm woodlots comprise 59 percent of the land area; and 17 percent of all wage earners are employed by the forest industries; and forest industries pay about 16 cents of every wage dollar which is earned in Virginia. But Virginia is spending very little on research to aid farm forestry. That the other states in the Valley are likewise not fulfilling their duty in this regard activities is shown below. The states have personnel engaged in farm forestry, as shown by Miscellaneous Publication No. 420 U. S. D. A. (April, 1941) as follows:

	Separate	Persons employed at the	
	state	land-grant institutions in	
	foresters	Teaching : Research : Extension	
Virginia	Yes	1	1 : 2
Tennessee	Yes	2	1
Kentucky	Yes		1 : 1
Mississippi	Yes	1	2
Alabama	Yes	2	3 : 2
North Carolina	Yes No	4	2
South Carolina	Yes		2
Georgia	Yes	6	3

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Respectfully submitted,

A. W. Drinkard, Jr., Chairman
Clarence Dorman
H. P. Stuckey

